RTCA Special Committee 186, Working Group 3

ADS-B 1090 MOPS, Revision A

Meeting #15

Proposed Changes to DO-260A to Account for Data that has not been recently refreshed

Presented by: Ron Jones

SUMMARY
The following are my proposed additions to DO-260A to define what is included in the ADS-B Messages when the data has not be recently refreshed. I have covered the Target State and Status Message and the Aircraft Operational Status Message.

The following are my proposed additions to DO-260A to define what is included in the ADS-B Messages when the data has not be recently refreshed. I have covered the Target State and Status Message and the Aircraft Operational Status Message. Note that for certain data elements no refresh is required since the information is static and should never change while in flight, such as 'Aircraft Length and Width Code' and 'Version Number'. Also in other cases the message formats provide only for broadcast of one of two allowed states neither of which is defined to mean unknown or invalid. For example in the Aircraft Operational Status Message the 'Track Angle/Heading' and 'HRD' subfields must be broadcast and there is no provision, and probably no need to accommodate an invalid or unknown state. Also note that I have proposed minimum update timeouts for those dynamic parameters that require refreshing.

However, this needs to reviewed by the working group to verify that the proposed values is reasonable.

Proposed changes to DO-260A are listed below:

1. para. 2.2.3.2.7.1.3.1 - insert a new next to last sentence as follows:

Any message parameter associated with vertical target state for which an update has not been received from an onboard data source within the past 5 seconds **shall** be considered invalid and so indicated in the Vertical Data Available/Source Indicator subfield.

2. para. 2.2.3.2.7.1.3.7 - insert a new next to last sentence as follows:

Any message parameter associated with horizontal target state for which an update has not been received from an onboard data source within the past 5 seconds **shall** be considered invalid and so indicated in the the Horizontal Data Available/Source Indicator subfield.

3. para. 2.2.3.2.7.1.3.11 - insert a new last sentence to the para. as follows:

If an update has not been received from an onboard data source for NAC_P within the past 5 seconds, the NAC_P subfield **shall** be encoded as a value indicating 'Unknown Accuracy.'

4. para. 2.2.3.2.7.1.3.12 - insert a new next to last sentence to the para. as follows:

If an update has not been received from an onboard data source for NIC_{BARO} within the past 5 seconds, the NIC_{BARO} subfield **shall** be encoded as a value of ZERO (0).

5. para. 2.2.3.2.7.1.3.13 - insert a new next to last sentence to the para. as follows:

If an update has not been received from an onboard data source for SIL within the past 5 seconds, the SIL subfield **shall** be encoded as a value indicating 'Unknown.'

6. para. 2.2.3.2.7.1.3.14 - insert a new next to last sentence to the para. as follows:

If an update has not been received within the past 2 seconds from an onboard data source for a Capability/Mode Codes data element , that data element **shall** be encoded with a value of ZERO (0).

7. para. 2.2.3.2.7.1.3.15 - insert a new next to last sentence to the para. as follows:

If an update has not been received within the past 5 seconds from an onboard data source for the Emergency/Priority Status , the Emergency/Priority Status subfield **shall** be encoded with a value indicating 'No Emergency'.

8. para. 2.2.3.2.7.2.3 - insert a new third paragraph of text as follows:

For a Version 1 Transmitting Subsystem, if an update has not been received from an on-board data source with the past 5 seconds for any data element of the Capability Class subfield then the data associated with that data element **shall** be considered invalid and so reflected in the encoding of that message element to reflect 'No Capabilty' or 'Unknown' capability.

9. para. 2.2.3.2.7.2.4.2 - revise final sentence of text following as follows:

"...know to be in effect (i.e, an update has not been received within the past 2 seconds that indicates a TCAS/ACAS Resolution Advisory is Active); otherwise....."

10. para. 2.2.3.2.7.2.4.4 - revise next to final sentence of the existing 1st para. of text as follows:

"....as indicated by an update having been received via an appropriate interface on board the transmitting aircraft within the past 5 seconds."

11. para. 2.2.3.2.7.2.6 - insert a new paragraph following the current note. as follows:

If an update has not been received from an onboard data source for NIC Supplement within the past 5 seconds, the NIC Supplement subfield **shall** be encoded as ZERO (0) to indicate that Rc is 'Unknown'. [*Editorial Note: This requires further discussion, since merely setting the NIC Supplement to ZERO will not cause the Radius of Containment to become "Unknown." Do we also say hat we need to set the TYPE Code to ZERO, or are we trying to only select the "lower" NIC value from those three situations where the NIC Supplement is required?*]

12. para. 2.2.3.2.7.2.7 - insert a new next to last sentence to the 1st para. as follows:

If an update has not been received from an onboard data source for NACp within the past 5 seconds, the NACp subfield **shall** be encoded as a value indicating 'Unknown Accuracy.'

13. para. 2.2.3.2.7.2.9 - insert a new next to last sentence to the 1st para. as follows:

If an update has not been received from an onboard data source for SIL within the past 5 seconds, the SIL subfield **shall** be encoded as a value indicating 'Unknown.'

14. para. 2.2.3.2.7.2.10 - insert a new next to last sentence to the 1st para. as follows:

If an update has not been received from an onboard data source for NIC_{BARO} within the past 5 seconds, the NIC_{BARO} subfield **shall** be encoded as a value of ZERO (0).